

REMARKS

In view of the following discussion, the Applicants submit that none of the claims now pending in the application is obvious under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of these claims are in allowable form.

In addition, the Applicants' representative would like to thank Examiner Ngo for kindly taking a substantial amount of time on May 13, 2009 to discuss the merits of the subject invention. The Applicants' representative is aware of the time constraint that is placed on the Examiner and is appreciative of the Examiner's willingness to devote such large quantity of time to discuss the case on the merits.

I. REJECTION OF CLAIMS 1-64 UNDER 35 U.S.C. § 103

Claims 1-64 stand rejected as being unpatentable over the Agarwal et al. application (U.S. Patent Application Publication No. 2004/0179486, published September 16, 2004, hereinafter referred to as "Agarwal") in view of the Banerjee application (U.S. Patent Application Publication No. 2002/0147722, published October 10, 2002, hereinafter referred to as "Banerjee"). The Applicants respectfully traverse the rejection.

In particular, the Applicants submit that Agarwal and Banerjee, singly or in any permissible combination, fail to teach, show or suggest the novel invention of examining the body substring of a datagram to determine, based on one or more words appearing in the body substring, whether the body substring matches a substring of interest, as recited in the Applicants' independent claims 1, 26, and 51.

The Examiner acknowledges in the Final Office Action that Agarwal "fails to specifically disclose having a datagram comprise a body substring and a header and applying an automation [sic] having a list of substrings of interest to the body substring of said datagram to determine whether said substring matches one of said substring of interest" (Final Office Action, Page 3). The Examiner submits, however, that this feature is taught by Banerjee. The

Applicants respectfully disagree.

Banerjee, like Agarwal, teaches a method for reassembling fragmented datagrams that uses information in the headers of datagram fragments in order to determine how to reassemble the fragments. In other words, the system taught by Banerjee is also unconcerned with the body (*i.e.*, data contents or words appearing therein) of the datagram fragments, as it is not needed to determine the manner of reassembly. For instance, the portion of Banerjee that the Examiner cites to support the teaching of “applying an automaton ... having a list of substrings of interest to content of said substring to determine whether said substring matches one of said substrings of interest” at most teaches that a reassembly queue for a datagram fragment “is selected by hashing the ip_id (*i.e.*, the datagram ID) appearing in the fragment’s header ...” (Banerjee, paragraph 0024, emphasis added). Thus, the “ip_id” does not “represent[] the body substring of [the] datagram,” (Office Action, Page 4) as the Examiner suggests, but is rather a part of the datagram’s header. Banerjee therefore suffers from the same deficiency as Agarwal.

Moreover, even assuming, *in arguendo*, that the “ip_id” of Banerjee “represents” the body substring inasmuch as it identifies the datagram containing the body substring, the “ip_id” does not comprise or contain any information about the contents (*i.e.*, words or data) of the body substring. Thus, examination of the “ip_id” (*e.g.*, by applying an automaton thereto) cannot be equated with examination of the words appearing in the body substring, as claimed by the Applicants. Banerjee does not even describe what exactly the “ip_id” is (*e.g.*, a numeric identification, a textual description, a combination of the two, or some other form of data). Banerjee thus does not teach examining or processing the actual body substring (*i.e.*, the words or data contained therein); at best, Banerjee teaches examining the header for information that abstractly represents the body substring.

Notably, Applicants’ invention positively claims the step of applying an automaton having a list of substrings of interest to the words appearing in the body substring of a datagram, in order to determine whether the received

substring matches a substring of interest, as claimed in Applicants' independent claims 1, 26 and 51. Examining the words contained in the body substring of the received datagram for content facilitates a variety of data analysis techniques, including intrusion detection, packet filtering, load balancing, routing, and other network related operations that make decisions based on the data contents of substrings. Specifically, Applicants' claims 1, 26 and 51 positively recite:

1. A method for detecting a substring of interest from a plurality of datagrams that arrives out-of-order, comprising:
receiving a datagram, the datagram comprising a body substring and a header with an index;
determining whether a preceding span exists in a span set;
determining whether a succeeding span exists in said span set; and
applying an automaton having a list of substrings of interest to the body substring of said datagram, wherein the automaton examines one or more words appearing in said body substring to determine whether said body substring matches one of said substrings of interest. (Emphasis added)

26. An apparatus for detecting a substring of interest from a plurality of datagrams that arrives out-of-order, comprising:
means for receiving a datagram, the datagram comprising a body substring and a header with an index;
means for determining whether a preceding span exists in a span set;
means for determining whether a succeeding span exists in said span set; and
means for applying an automaton having a list of substrings of interest to the body substring of said datagram, wherein the automaton examines one or more words appearing in said body substring to determine whether said body substring matches one of said substrings of interest. (Emphasis added)

51. A computer-readable medium having stored thereon a plurality of instructions, the plurality of instructions including instructions which, when executed by a processor, cause the processor to perform the steps of a method for detecting a substring of interest from a plurality of datagrams that arrives out-of-order, comprising of:
receiving a datagram, the datagram comprising a body substring and a header with an index;
determining whether a preceding span exists in a span set;

determining whether a succeeding span exists in said span set; and applying an automaton having a list of substrings of interest to the body substring of said datagram, wherein the automaton examines one or more words appearing in said body substring to determine whether said body substring matches one of said substrings of interest. (Emphasis added)

As discussed above, the systems of Agarwal and Banerjee are completely devoid of any teaching or even suggestion relating to the desirability of examining words appearing in the body of a data packet (or segment thereof). Thus, the Applicants respectfully submit that claims 1, 26 and 51 fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder.

Claims 2-25, 27-50, and 52-64 depend from independent claims 1, 26, and 51 respectively and recite additional features. As such, and for at least the same reasons stated above with respect to claims 1, 26, and 51, the Applicants respectfully submit that claims 2-25, 27-50, and 52-64 also fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder.

II. NEW CLAIM

The Applicants have added new independent claim 65. In accordance with the Examiner's suggestion during the interview of May 13, new independent claim 65 recites some of the details of the string matching process described, for example, on page 11 of the Applicants' specification.

III. STATEMENT OF SUBSTANCE OF INTERVIEW OF MAY 13, 2009

In response to the Interview Summary dated May 28, 2009, the Applicants submit the following statement regarding the substance of the interview of May 13, 2009:

- A) No exhibits or demonstrations were conducted.
- B) Claim 1 was discussed.
- C) The Agarwal and Banerjee references were discussed.

- D) No concrete agreement was reached with respect to the claims.
- E) The Examiner's Interview Summary correctly describes the substance of the interview.
- F) No other pertinent matters were discussed.
- G) The Examiner and the Applicants agreed that the Applicants would amend the claims in order to distinguish them over the Examiner's interpretation of the references.

IV. CONCLUSION

Thus, the Applicants submit that all of the presented claims fully satisfy the requirements of 35 U.S.C. §103. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of a final action in any of the claims now pending in the application, it is requested that the Examiner telephone Kin-Wah Tong, Esq. at (732) 842-8110 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



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Date

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